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Abstract

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The partially condensed fluid recycle stream of a fluidized bed polyolefin reactor operating in the condensing mode is split into two portions by a stream splitter. In a preferred mode, the smaller stream from the splitter contains a higher ratio of liquid to gas than the larger stream. One portion of the split stream is injected below the fluidized bed and the other, preferably with enhanced liquid content, is injected into the fluidized bed at a level above the product withdrawal level. Regulation of liquid injection above the product withdrawal level, as a function of liquid in the product discharge tanks, reduces the liquid in the product discharge system, resulting in improved discharge cycle times and more efficient conservation of monomer and other materials which might otherwise be lost in the discharge process.

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